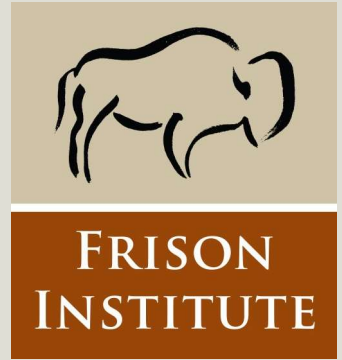


Supporting Archaeological Research at U.W.

From the Director, Todd Surovell

In my twenty years at U.W., I have seen the Frison Institute grow from humble beginnings to an impactful research entity that every year funds 15 to 20 archaeological projects for students, faculty, and other professional archaeologists in Wyoming. Institute funding of archaeological research fills an important hole in the research landscape. Large grants from external agencies are increasingly competitive and require investigators to have pilot data in hand as proof of concept. Funding for student research is especially limited. I want to emphasize that we are able to do this work because of the support of donors like you. In the last academic year, the Institute funded eleven graduate student, one undergraduate, two faculty, and three professional research projects. These projects span a huge range of topics, some of which you will read about herein.



I also want to share that there is a changing of the guard underway in the Department of Anthropology. Former Institute Director Dr. Robert Kelly retired in August. Another former Director, Dr. Marcel Kornfeld, is scheduled to retire at the end of this academic year. Long time cultural faculty member, Michael Harkin retired in May, and Pam Innes, a linguistic anthropologist, will retire in the spring. We have been very fortunate to have hired five new faculty members in the last five years. Dr. Briana Doering is an archaeologist who works in Alaska and will soon begin a reinvestigation of the Colby Mammoth site. Dr. Randy Haas is a hunter-gatherer archaeologist who works in Peru but hopes to soon start a project in Wyoming. We have also added to the faculty two cultural anthropologists, Drs. Allison Caine and Lauren Hayes and one linguistic anthropologist, Dr. Nikolas Sweet. New faculty bring new approaches, geographies, and energy to the Frison Building, and we are thrilled to have them.

A MEDICINE WHEEL IN THE LARAMIE BASIN?

Medicine wheels are stone alignments found across the Northern Great Plains from Alberta to Wyoming that likely served religious purposes. Many medicine wheels include a stone circle with internal spokes. The best known is the Bighorn Medicine Wheel east of Lovell, Wyoming. Over the last ten years, archaeologists in the Anthropology Department became aware of a possible medicine wheel in the Laramie Plains, not far from U.W. Despite its proximity to campus, it had never been recorded. The wheel (shown to the right) is about 6 m in diameter with six spokes. On its north-western side is a football-shaped enclosure with a triangle on its interior. With Institute funding, for his MA thesis, Dan Garner used aerial photography, lichenometry, and optically stimulated luminescence dating to try to determine if this feature dates to modern or precontact times. Aerial photography confirms that the feature was present back at least to AD 1212. Lichen growth on its stones supports the hypothesis that it was constructed before AD 1969. Preliminary OSL dates on sands associated with the feature suggest an age of at least 300 years. In sum, all three dating methods agree that this feature could be an authentic and previously unrecorded medicine wheel. Dan graduated in the spring and is now in the PhD program at the University of Michigan.



INSTITUTE FUNDED RESEARCH

STUDENT RESEARCH

Student research continues to be a major focus of Frison Institute funding. This year, the institute funded a total of twelve student research projects, including one undergraduate (see June Frison Fund below). Prehistoric and



MA Student Sean Carey prepping mammoth bone for curation.

WILLIAM AND GLORIA TYRRELL & PATRICK ORION MULLEN FUNDS

The Mullen and Tyrrell funds supported two PhD students, McKenna Litynski and Sarah Allaun, to travel to Manchester, UK to work in the lab of Dr. Michael Buckley to refine our ZooMS methods. ZooMS is shorthand for zooarchaeology by mass spectrometry, an exciting technique that uses the structure of the collagen protein in archaeological bones to identify taxa. Using this method, we can identify the family, genus, and sometimes species of bone fragments for which traditional morphological identification is not possible. The ZooMS method can be applied for any bone with collagen remaining in the mineral matrix.

We have been building infrastructure in the department's Geoarchaeology Laboratory to do in-house ZooMS analysis by teaming up with the Basile Lab in the Department of Chemistry. Two MA theses and several small studies using ZooMS have already been completed in the department.

Sarah and McKenna traveled to the UK to refine our application of nondestructive ZooMS methods. Dr. Michael Buckley was the first person to develop this method for application to archaeological sample. With Dr. Buckley, they analyzed Clovis bone needles and a bone bead from the La Prele mammoth site. Results of those

analyses have not yet been published, so stay tuned!



A Clovis tubular bone bead from the La Prele Mammoth site. This is one of the oldest bone beads known from the Americas.

JUNE FRISON FUND

The June Frison Fund supported nine projects this year. Ann Stephens, who recently transitioned from the BA to MA program, completed a ZooMS analysis of fauna from the Harold Bergman site in the Laramie Basin, a location of more than 10,000 years of hunting near artesian springs. In a highly fragmented faunal assemblage, Ann found that bison and pronghorn were the most common species hunted, but she was also able to identify the presence of canids, likely coyote or wolf. One surprising result was that a finely serrated bone tool was manufactured from antler, likely from an elk or moose.



Ann Stephens preparing samples for ZooMS analysis.

FUND FOR WYOMING ARCHAEOLOGY

by *Marcia Peterson, Assistant Wyoming State Archaeologist*

OWSA and Dr. Bree Doering received a June Frison grant for faunal analyses and radiocarbon dating from OWSA's 2022 testing at an ice cave in the Bighorn Mountains. Identified fauna include elk, bison, coyote, Bighorn sheep, marmot, cottontail rabbit, and pack rat. OWSA also received a Fund for Wyoming Archaeology grant to

excavate a test unit in the east-facing rockshelter in 2023. We located stratified Archaic-aged deposits with one Early Archaic dart point, one quartz crystal

dart point fragment, a bone bead, a hammerstone, two bifaces, four flake tools, three scrapers, five cores, six bone tools, and many bone/tooth fragments, and pieces of debitage.



Leroy Dike and Ken Hladek excavating a 1 x 1 meter test unit (August 23, 2023).

WAPA FUND

by *Casey Black, M.A. Student*

The use of stable isotope analysis allows archaeologists to better paleoecology, diet in prehistory, and the relationship between humans and animals, including human predation of mammoths. My project is focused on analyzing variation in nitrogen isotope values among mammoths to determine if there is a relationship between cultural association and $\delta^{15}\text{N}$ values. Preliminary results indicate similar values between mammoths of known archaeological origin, with unique $\delta^{15}\text{N}$ values possibly reflecting starvation or environmental differences. I am expanding this project to further understand this relationship and paleoecology in the Pleistocene.



Mammoth skull in situ at the Warrant Mammoth site.

FALL LECTURE

Dr. Calogero Santoro of the University of Tarapacá in Chile spoke about his work spanning the Pleistocene and Holocene in the hyperarid core of the Atacama Desert.

2022-23 Donors Thank you for your support!

[September 2022 to September 2023]

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